

# 2011 Military Health System Conference

## *Leveraging Informatics For Healthcare Innovation*

*The Quadruple Aim: Working Together, Achieving Success*

Lt Gen C. Bruce Green   CMSgt Charlie Cole

25 Jan 2011



Office of the Air Force Surgeon  
General

# Air Force Mission - “Aim High”



- **Global Vigilance**  
Persistent, Actionable
- **Global Reach**  
Anywhere, Anytime
- **Global Power**  
Rapid, Decisive



***Fly, Fight, and Win...in Air, Space, & Cyberspace***

# AFMS Mission



*A Heritage of Innovation - A Passion For Excellence*

# **AFMS VISION:** **WORLD CLASS HEALTHCARE FOR** **OUR** **BENEFICIARIES ANYWHERE,** **ANYTIME** **Generation Of Knowledge**

**An Entity In Continuing Pursuit Of  
Perfection Through Elimination of  
Waste And The Generation Of**



# We Sought Disruptive Innovation...

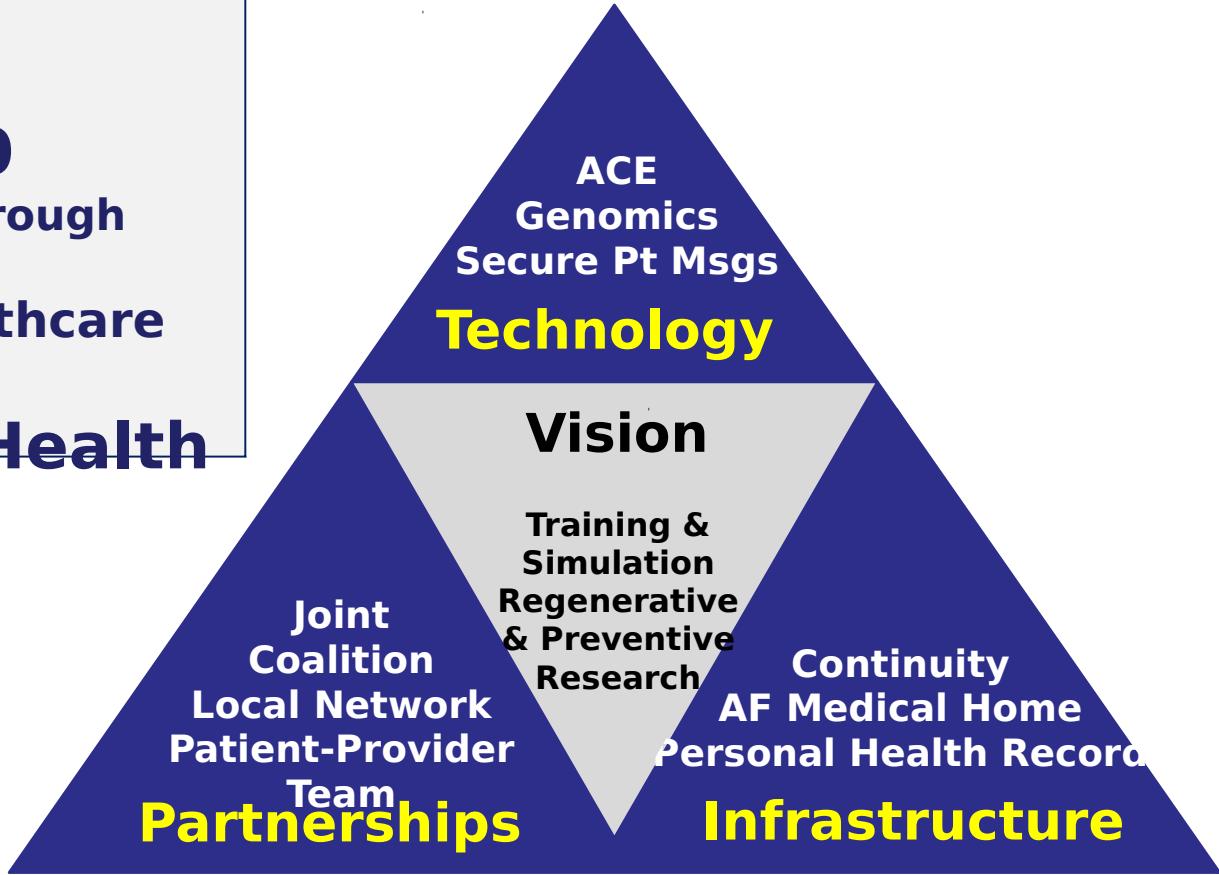


**MHS 2010**

Achieving Breakthrough  
Performance

The Learning Healthcare  
System

**Healthcare To Health**



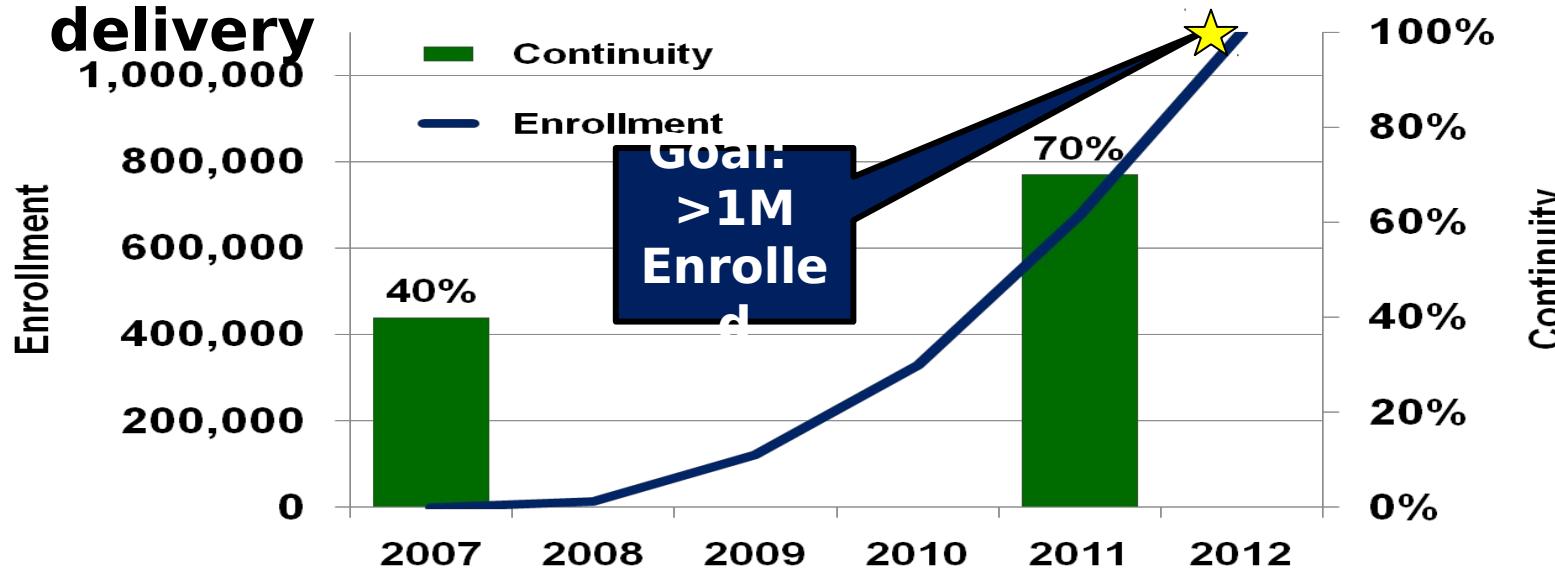
**We Must Continue To Transition From Healthcare To Health**

# AF Patient Centered Medical Home



## ■ PCMH Objectives:

- Continuity = healthier outcomes
- Improve access, quality, service
- Encourage teamwork & communication
- Incentivize healthcare outcomes NOT just delivery



*Creating The Informatics Foundation For The Future Of*

# Leveraging Medical Informatics



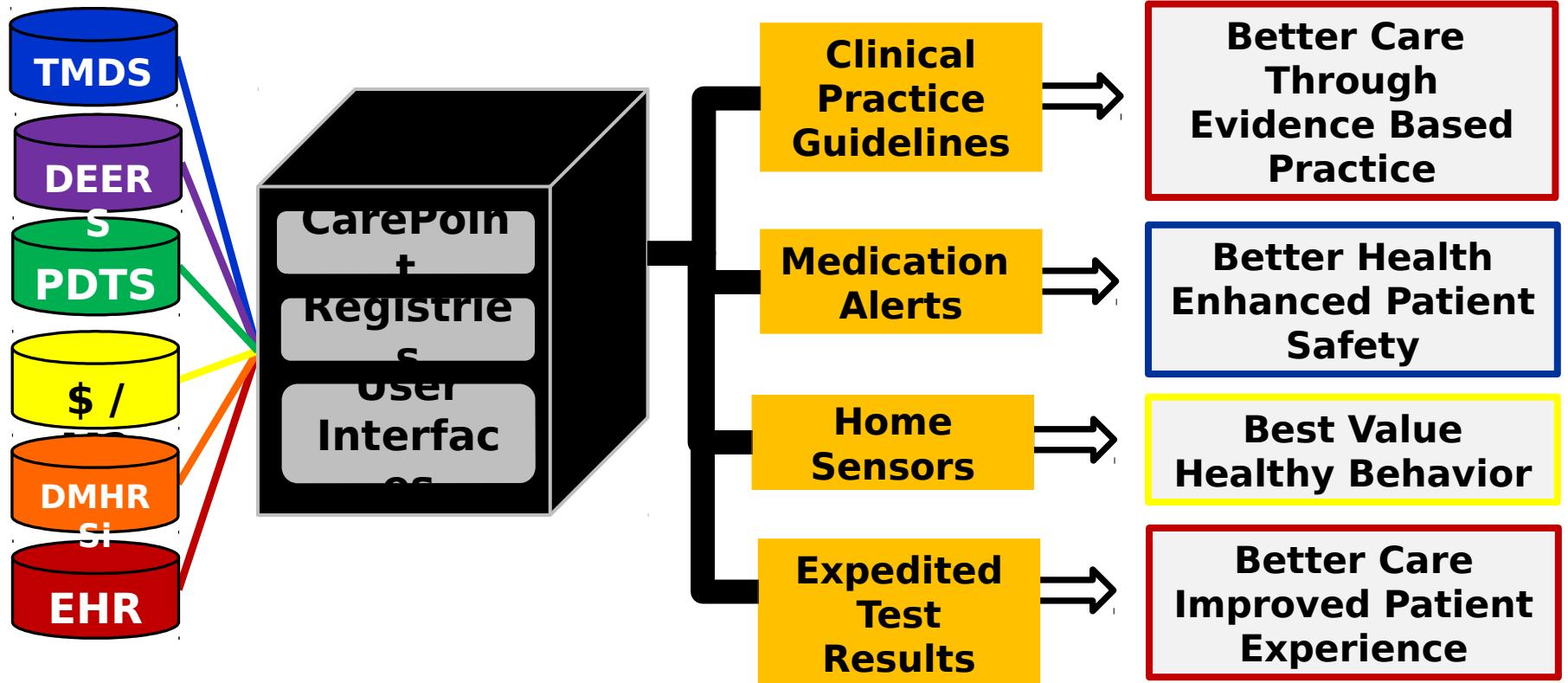
**DATA**

**INFORMATI  
ON**

**KNOWLEDG  
E**

**WISDO  
M**

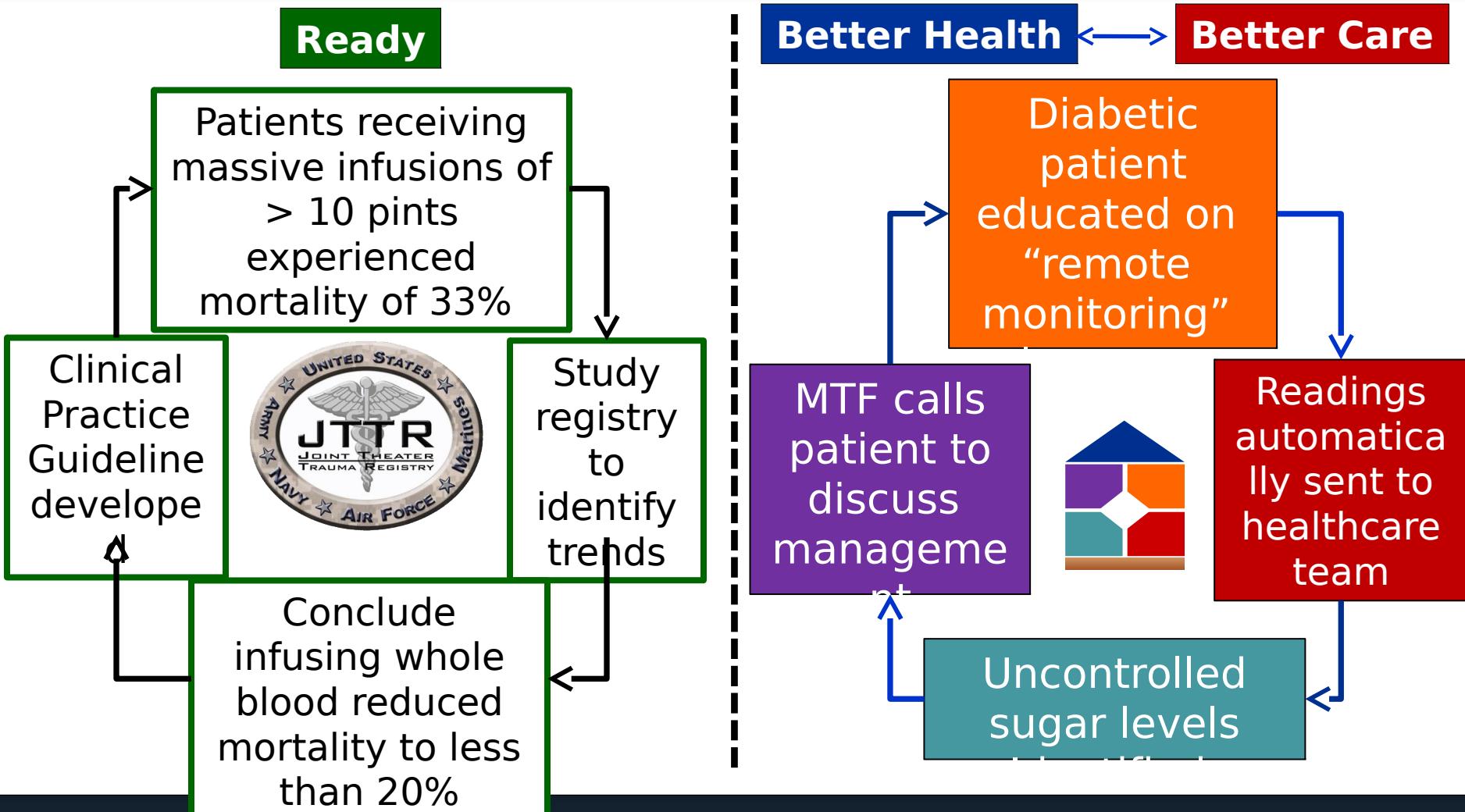
**CHANGE**



***Decision Support Is No Longer Just For Our***

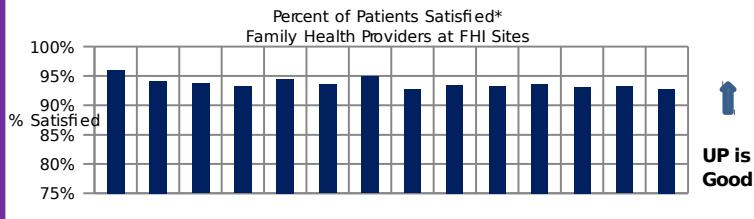
***Providers***

# Transforming Data Into Knowledge

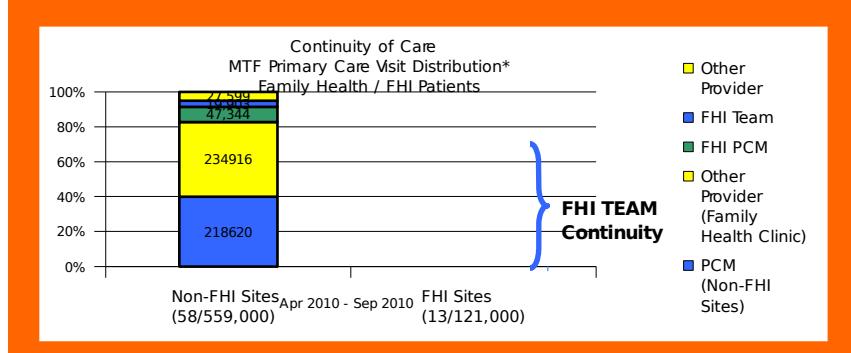


**Using Informatics To Accelerate Change In Practice Patterns & Behavior**

# Create The Setting For “Right” Behaviors

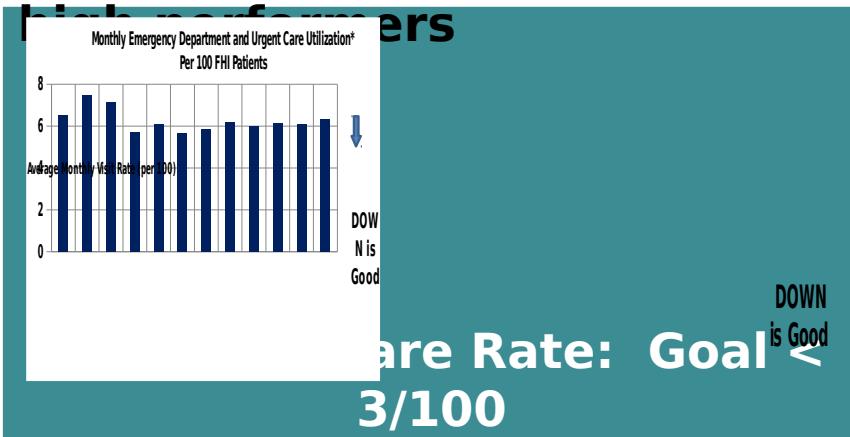


**Satisfaction: Goal >95%**

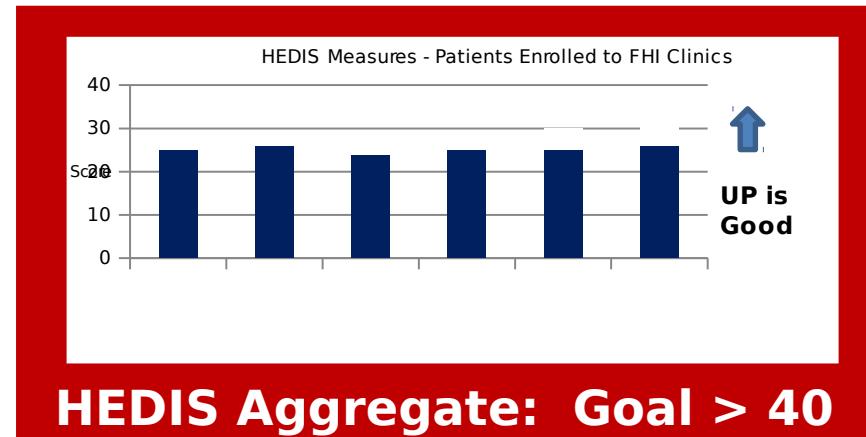


**Continuity: Goal > 90%**

**Plan: Provide both monetary + non-monetary incentives to high performers**



**Emergency Care Rate: Goal < 3/100**



**HEDIS Aggregate: Goal > 40**

**Aligning Our Metrics To Inspire Change**

# Better Care Through Innovation



Now



Standard ICU

Advanced ICU

Adopting Best Practices



Based on model from  
Lehigh Valley Health  
Network

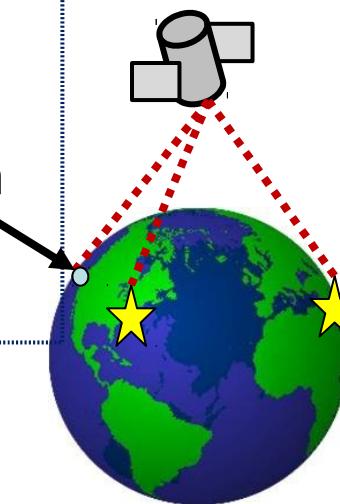
Advanced ICU

Future

Advanced ICU  
Network  
(remote monitoring)

Monitor  
from  
any  
location

Langley TAFB



Bagram AB



*Maximize Safety And Expertise For Decision  
Support*

# Integrating New Technology



Current CCATT mission



Future CCATT mission - Wireless



**From Force Health Protection To Logistics To Portable Surgical Tools**

**Directed Energy Sensors**



**Automated Information & Data Collection**



**Hand-held, Battery-powered, Laser Cautery & Ablation Tool**

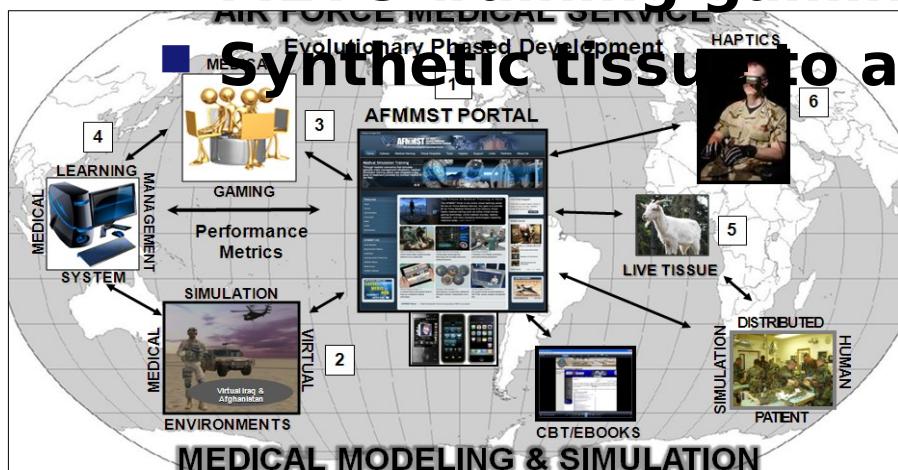


**Improving Our Environment Of Care To Deliver Better Outcomes**

# Generating Skills/Knowledge Through Medical Simulation



- Maximizing the skills of our entire healthcare team
  - Acclaimed for modeling and simulation excellence
  - Initial funding secured & phase 1 development
    - METC training gaming simulations



**Synthetic tissue to augment/replace live tissue**



**Realistic Settings Improve Healthcare Team Capabilities**

# In Pursuit Of Perfection...



## ***Humanitarian Assistance***



### ***Airlift/Deployment Requirements:***

***< 24 HRS +***



### ***Rapid Response Medical Capabilities:***

*Emergency, Resuscitative, & Surgical Care*

***Operational Lessons Learned Earthquakes***

*Chile: Jan 2010  
Haiti: Feb 2010*



***Naval Health Research Center (NHRC)***  
*Data Modeling & Forecasting*



***Earthquake Indonesia***  
*Oct 2009*



**CAN WE DO BETTER?**

***“Care Upon Arrival”***  
***1<sup>st</sup> Patient in 1 Hour***

***The Difference Between Life & Death Is Often Measured In***

***Minutes!***

***Hrs***

# Expeditionary Medical System Health Response Team (EMEDS-HRT)



Concept To  
Field Testing  
< 12 months



*Emergency care: 30 min  
ER : 2 hours OR: 4 hours*

FOC: 12-18 h

**Innovative  
Equipment**



**Lightweight  
Roll-on  
Roll-off  
Storage**



**Mini  
Ultrasound  
(GE Vscan)**

*The Future of Expeditionary Operations...NOW!*

# Expanding On Innovative Concepts



## INTERFLY AGREEMENT

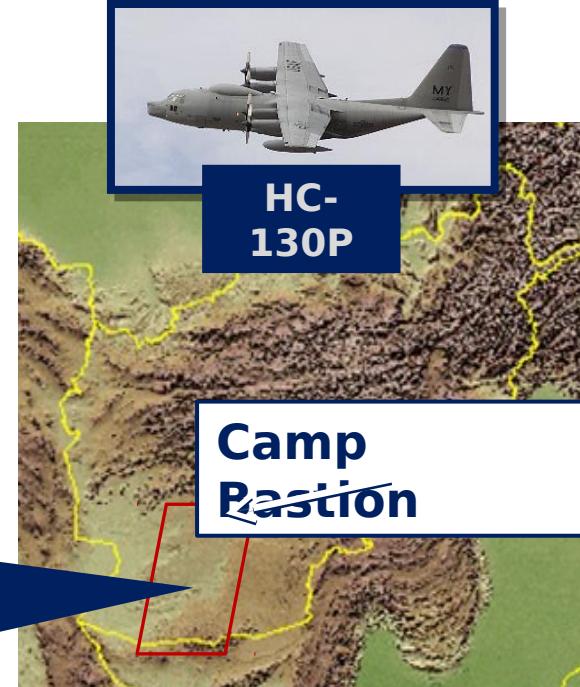


Applying Lessons Learned From The C-17

\*AeroSpace Interoperability Council



Insurgents shot down HH-60G Pave Hawk killing 4 pararescuemen injuring 3 other



Capitalizing On Interoperability, Agile Partnerships!  
In Helmand Province



Working Side-by-Side  
Casualty #1:  
Casualty #2:



# Intra-Theater Critical Care Transport Gap



Learning From Coalition Partners, We Leveraged Trauma Registry Data To Build Innovative Solutions

Tactical Critical Care Evacuation Team (TCCET)



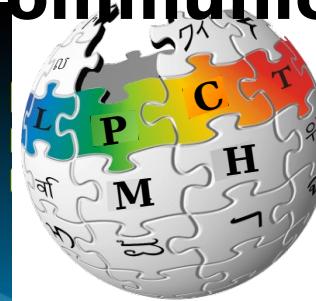
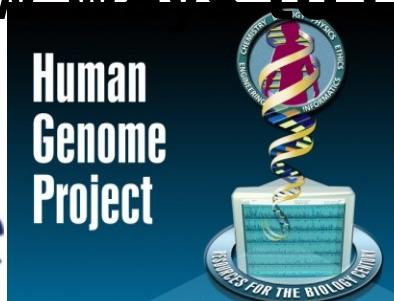
Single Intensivist

Augmenting Our Outstanding Tactical Medical Teams

# Synergy Accelerates Transformation

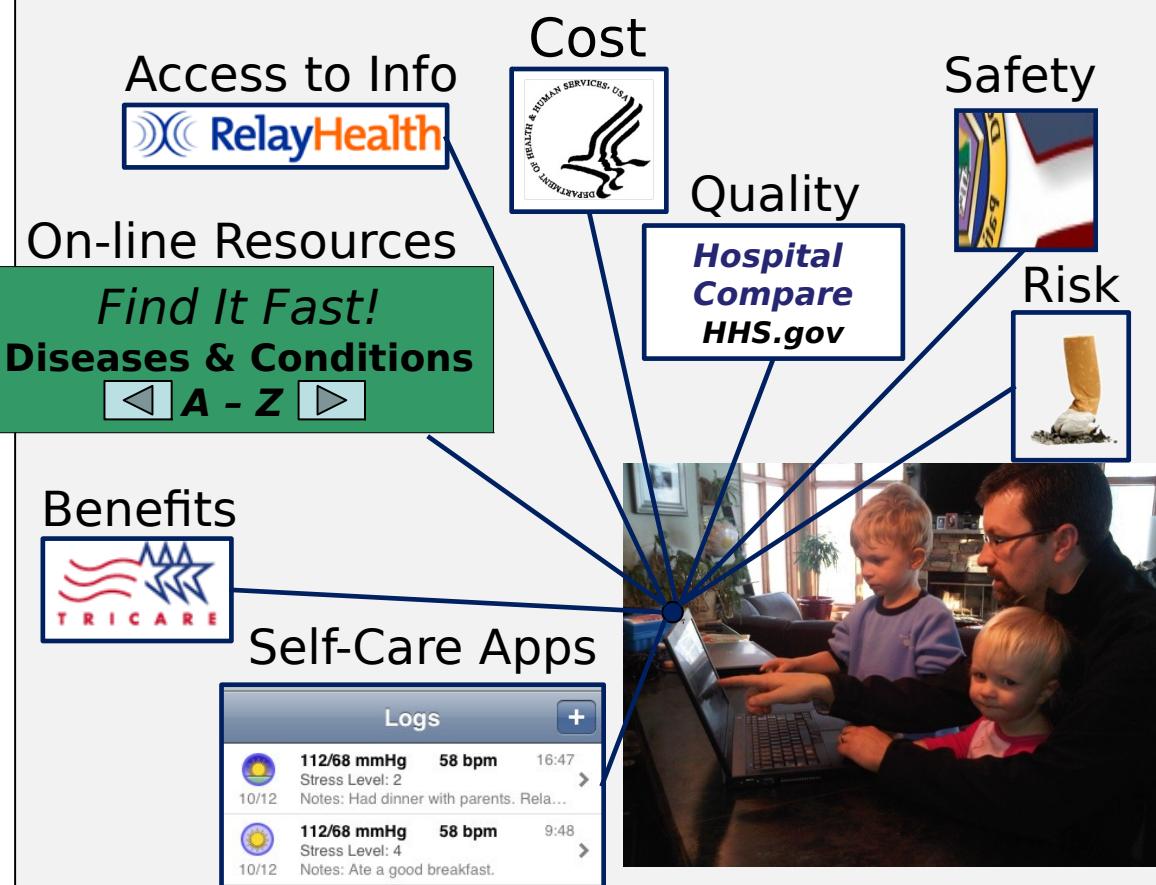


- Leverage civilian expertise through “open” partnerships
- Unleash the power of mass collaboration
- Empower beneficiaries to be informed consumers
- Improve trust through transparency
- Explore new ways to communicate



*Generating & Sharing Knowledge Leads To*

# Consumer Driven Health Begins With Information & Transparency



## Alternatives For A Solution

### Pay For Health & Readiness

- Health Savings Account
- Selective Co-pays

### Concierge Care (PMPM)

- Wounded Warriors
- Chronic Conditions

***Inviting Patients To Be Part Of The Solution...  
We Must Drive Informed Decisions!***

# Peacetime Care Underpins Readiness



## Cardiothoracic Surgery Suite David Grant Medical Center Travis Air Force Base, CA



**State-of-the-art operating room integrates advanced robotic technology for complex cardiac and**

**Constant Pursuit of Innovation Through Generation of Wisdom**

**STARS AND STRIPES**  
Volume 69, No. 189 CSS 2010 C Saturday, October 23, 2010 stripes.com 50¢

## Lifesaving INNOVATION

Portable heart-lung machine used in combat evacuation

By SETH ROBBINS  
Stars and Stripes

LANDSTUHL, Germany

A U.S. team for the first time in a combat evacuation has used an innovative and portable heart-lung machine, saving a 22-year-old soldier wounded in Afghanistan.

The soldier had been shot in the chest, and a bullet had shredded his lungs.

That's when Dr. (Lt. Col.) Sandra Wanek got the call. The trauma surgeon led this week's medevac mission out of Afghanistan as part of Landstuhl Regional Medical Center's Lung Rescue Team, which flies to combat zones to treat servicemembers with the most serious lung injuries and evacuate them to Germany.

Within hours, Wanek and her team were bound for Kandahar.

When they got there Wednesday, they operated on him for five hours and tried several different ventilators, but all of them failed.

"I just could not improve his oxygenation to the point where it was safe to fly," Wanek said.

After missing an evacuation flight and doing one more hour of surgery, Wanek chose to use the device — known as an extracorporeal membrane oxygenation (ECMO) machine — for the first time.

SEE INNOVATION ON PAGE 5



**The ECMO machine**

The extracorporeal membrane oxygenation machine is a portable heart-lung machine developed by German doctors. It works by filtering carbon dioxide out of a patient's blood and infusing oxygen into the blood, mimicking the tradeoff that takes place naturally in the lungs.



**UKR**  
Universitätsklinikum  
Regensburg

# Putting It All Together...



## MHS Quadruple Aim

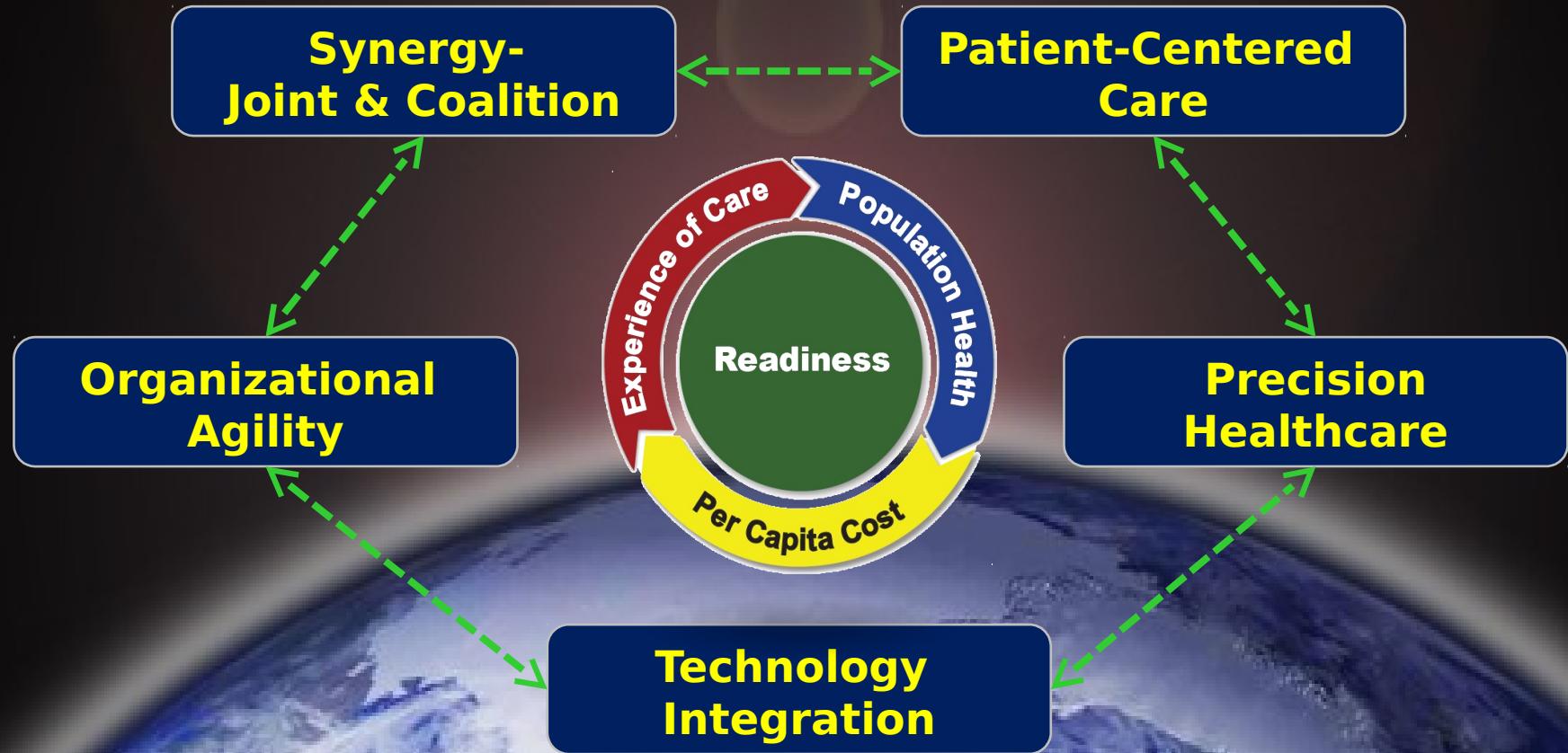
Ready

Better Health  
“Population Health”

Better Care  
“Experience Of Care”

Best Value  
“Per Capita Cost”

# Shaping the Future of Military Healthcare



***Working Together, Achieving Success Through A Common Vision***

**“TRUSTED CARE  
ANYWHERE”**

